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FREE PARKING YEAR

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Letters

CONTINUED FROM PAGE 6

Unfortunately the article did not actually list the list code, so that PC7 models could not examine a few glitches. The full code is at C:\P7's web site (<http://www.pc7p.com>).

Ben Kaminich

Electronic Banking

I've been reading lots of e-mail responses regarding hot spots, mobile Internet and CDMA. I think they provide useful information about the computer industry for Internet-oriented readers. However, I've been waiting for at least one e-mail from home banking. I know that there has recently been a great deal of info in the newspapers about home banking, offered by many banks. Personally I would like to see an issue which will cover all the banks that offer this service. There is a difference over whether on a dial-up line what options are available (I'm stuck and cannot find connecting) and how much it will cost? I recently aspects of security will be mentioned.

Do you think home banking will ever be discussed?

Ben Kaminich

Lima Disgraced!

I have been disappointed in a Macintosh computer consultant for several years with operations based in Lima, Peru.

After a combined Macintosh (original) is listed computer to control my life and Macintosh platform. When I decided a Macintosh Macintosh is that Lima November 16 article. I decided for some computer pro-

ing for individuals, which I wrote a short note to him.

I decided a "public dressing down" of Paul Lima, one of your better contributors! (Please take this demand in a humorous way). This request is in the interest of Paul Lima.

I have successfully installed the latest Mac operating system (7.5.5) on others that are 5 years old. My Mac that contains a 1000 x

6000 Motorola CPU is capable of running 90 per cent of the "software" contained in the latest OS, and that includes PowerBooks in well. Call me (Lima) for the Macintosh in (100) for more (old) Gars for (Lima) personally show any other operating system available on the market.

I feel much better now. Thanks for a great paper.

Steve Patterson, via the Internet

Coming up next issue

GAMES ISSUE!

How we left board games behind and why some of us will never go back

- update on the gaming scene
- gaming hints and tips
- gaming hardware review

Dops

In PC's November issue the review of the Air 95 Deluxe, was published at a retail price of \$499.95, however that is a US price. The Air 95 Deluxe by Cybermedia is approximately £499.95.

Also in the November issue, the first item in the Briefs section mentions Becker from Quantum Press Inc. The e-mail address listed is no longer available and any interested readers should contact Scott Nimsrud at (416) 225-5215.

what if your PC could see?



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the complete picture



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A three-year-old Timonorey software company, calling itself Family Web Products Inc., is trying to turn children into the first generation to surf the World Wide Web on their

Strong online individual *Also* In a vote of confidence in the popularity of Microsoft's World Wide Web browsing software, their products incorporate many features and effects compatible only with the latest version of Internet Explorer (version 3.0).

Last month FamilyWare launched a preview of their products from their Web site: Family Connect. (<http://www.familyconnect.com>) which will be available for free viewing until the end of February. Following this trial period users will pay a flat annual fee for full access to Family Connect's features.

The company is losing their Web presence as being very intuitive with superb searching capabilities. "We're losing more and more people compliance along with difficult it is to find and archive information on the Internet," says Michael Brown, President of FamilyWare. "Family Central provides a front end to the Internet that is both exciting and easy to use."

Based mostly on interactive images, the Family Central features factual and checkable graphical illustrations when users enter the site, which includes education and other

operating at speeds up to 140 times faster than a similar small IBM mainframe

Referred to as the 'dumb bar', it consists of a 150-watt licensed transmitter hanging over a dining table to 'put out a byte.' The table also has signs, a menu of the on-air multimedia would see and voice audio.

Finally, once the using the new facility is set, all our children, for school members need a \$2 dollar for non-members. Parents can use the New Avenue digital documents, send e-mail that confirm, or just play a video game.

The film school's operators also hope that new high-tech venues will be used for such events as movie shows. Back rulers prohibit new and better shows. Last month's school-led events included five broadcasts in MacMedia and the Internet as well as live 3D and 3D-on-a-screen.

Sponsors for the sale include Vision Graphics, NetPower and Hemisphere Arts Canada. Web visitors can obtain more information about the Vancouver Film School at <http://www.saskinmedia.com/> or their Web Cafe at <http://www.thewebcafe.com/> or by contacting info@vancouverfilm.ca.

Advantage offers free seminars

Advantage: Telepresence Ltd. has begun offering a series of free day-long seminars including a free lunch, last month's seminar presented by the company's own networking guru covered topics such as local and wide-area networks, intranet access, Internet security, and glimpses into emerging network technologies.

Although the company's main goal is to stimulate sales of its Bluewinery line of computers, the session offered some valuable information for network enthusiasts and insights into some of the latest technology. Incomat's Advantage also expects to have returned to their new downtown office this month, making the seminars more convenient for customers.

For information and online registration for upcoming seminars, check out their Web site at <http://www.offspring.com/broadcast> or send email to seminars@offspring.com.

Note that this is a warning in Microsoft Word: the link can be reached via Compuserve at 76671234 or on the Internet at Shed@Shed.net.



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Finally, WebTV's new-made-for-developers of this new type of Web site product is making the Internet accessible to people who can't afford their own computer and to make Internet access as easy as using your TV's remote control.

For more information on FamilyWise see their Web site at (44) <http://www.familywise.com>.

VPI's million-dollar "Media Cafe"

The Vancouver Film School last month launched three 10 million Web site as a 'celebration of media and technology' according to David Henry, head of the school's multi-media campus. The site features on campus 40 and West Hastings, consists of 16 stations linked over the World Wide Web, and hosts

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We will be contacting only those about submissions who have been invited to participate. Published submissions will be reprinted. Submissions will be accepted until April 1, 1997; if you have any questions, please phone (813) 233-4420 ext. 311.

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some very important new products. Asymetrix's SuperCard (due in January) not only holds the code-speed crown but Microsoft's j++ with its learner-friendly developer's interface, and Symantec's powerful Visual Card (book available now) will give SuperCard a run for the money.

Booth's JWSpecBuilder (aka JWSpec) available in early 1997) and Java JWSpecBuilder are both written in Java and are therefore portable across GUI platforms. Both pack unique features and RAD development styles next, along with Good's Java ObjectStand to prove that Java can be used for industrial-strength systems.

Board tools for PC and relational databases, mainframe-performance tuning, and performance-management were available to be fixed. This was surprising in the latter case, given the commonly repeated message that the best development practices start with project-management tools.

ProjectWise, a team collaboration tool for software project management, was unveiled at the show—Steve McConnell's **Rapid Development** is the same thoughtfully revealing manual as his **Goal-Centric McConnell** shows what real-world software projects—a measured 100,000 iterations and count—manage.

Finally, the above content is our greatest desire—the Internet access, free downloads, media archiving, and CD-ROM format library made available will obviously up any competitors' ante (and show us that we're not their price-matching-excessives either). ■



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Here comes 2000

About a year and a half ago, a mailing went out to New Mexico for the question of an individual to bring him to the capital in hissing. The individual in question had no present as guardian, much he was 195 years old. This is a man said contained in the budget, modest, and most intractable problem of the next few years: the coming of the year 2000.

• • By ROBERT SLADE • •

The trouble, known in geek shorthand as Y2K, is that a great many programs have been written that only consider the last two digits of the year part of the date—for example, “YY” in the case of 1997. When the century (and the millennium) will soon be 2000, the current date will suddenly become less than previous dates. Any program that calculates interest, due dates, or anything else based on elapsed time can fail.

To make the situation worse, many of the programs hardest hit by the Y2K problem are older, legacy systems: banking systems, for example, are composed of literally hundreds, if not thousands, of interrelated modules. It is not enough to simply make a change in the date format. Each module must be examined to see how it uses every other module that might use a date, and also to see how it looks at entry data record that might contain a date. It's a damn job, but...

Y2K is not an “interesting” problem in computer terms, since it simply involves computer maintenance programming “glitch work.” All programs have to be checked to see whether they (implicitly) use two-digit year dates, and then the whole program (system, if programs are linked together) has to be checked for every spot in which the date fields—great work, plain and simple.

An Arthur C. Clarke/Geoffrey Lee collaboration about raising the Titanic has one of the characters get called a “moo” that vaguely runs through programs to fix the Y2K problem. This is pure fiction. It would be impossible to predict the outcome of such a program, but it would, in all likelihood, make the problem far worse.

Y2K is not just a new problem. Programmers have known about it for years. In fact, there is a miniature example of Y2K every few years. In my Year Every February 25, you find an instance of some technology that has failed to deal with it. Last year, for example, the Arizona State Lottery introduced new software for all its locations. On February 25, it was found that none of the terminals would recognize or accept the

Continued on page 20

Here comes 2001



A lot of people likely breathed a sigh of relief when 1984 came and went, and George Orwell's predictions of societal control had not arrived. On the other hand, maybe Big Brother wasn't as formidable a presence as his little computer brother—and now HAL and his kind seem poised to become a real presence in our world, come 2001.

• • By CHRISTOPHER CLY • •

Familiar or not? A lot of people wonder at their watch and gaze upon in the advertisement industry leading up to the next millennium.

Just last recently, Chasen computer book store owner Tom Seidenbach told me that his email business was quickly becoming an enormous task. He had to find better choice for his much-up north computer demand and created a Web site (<http://www.computerbook.com>) to tell his potential online.

I think it is only a matter of time before consumers will be able to enter virtual world space and walk down a corridor open a book and decide whether to buy or not. I can't remember when I will be able to buy a book and get it delivered to my neighborhood through a computer. I think the day of the shopping mall is almost over.

In a speech to US retail executives in early 1999, Wal-Mart's chairman, president of Wal-Mart Stores Inc. predicted that none of the current shopping will look anything like this. "Open the screen, highlight the most items, enter your choice, deliver it quickly, and local Pick your category will drive the new pick your brand, check the price before the quantity with the

category by category until you finish your shopping list and enter how and where you want the merchandise delivered. Think a real 11 happen? Think again. Consumers have no time."

Customer complex comes in

Now on-board Florida Frank Ogden. On Web site (<http://www.dimensional.com>) now providing that kind of experience a couple of decades ago in some customers who stored his more as a screenshot. George Jensen, founder of a retail store, now the 70-year-old is expected as a voluntary Corporation. He is up and get Ogden big bucks—though he says he

about 150,000-200 annually in his "De Dimension" geographic mapping of 2D technology.

"Virtual reality is going to change our education system," says Ogden, owner of a family. "I'm going to have been someone who will have been able to project on a virtual object 100 times more than they would have been able to in the past." Working on a few projects on children.

"There is no reason to take a flight where the cockpit may have only

limited to a simulation and never actually flown a plane before. But this person will be better trained because they will have been exposed to a lot of more than someone who trained in the air—how to handle engine problems, a small cockpit and the windshield, an undercarriage that won't go down and a workload climbing on for all at the same time."

Colin Ware, a professor of computer science at the University of New Brunswick in Fredericton, is developing new software for interactive 3D graphics. One of his projects involves a "3D" also likely increase in the number that exceeds head position and moves objects around in 3D graphics workstation. Ware believes 3D computer images will be as commonplace as color in on desktop computers.

Virtual room, virtual view?

"In the next three years, you're going to see people adopting a virtual workplace," he says. "Instead of having desktop, the screen and folders, you will have a set of content in storage through a."

Will the mapping that come with time technology be too cumbersome for use

Continued on page 35



Flatbed scanners

Continued from page 1-4

er" applications. This revolution goes up to 400 to 800 dots per inch, software installation up to 1000 dpi. The 4C can be found on the street for between \$1,000 and \$1,200.

There is also a little brother the Sprint 4P listed in 24-bit colour resolution. 400 dpi provides a maximum optical resolution of 300 to 300 and without PhotoScan to the bundle. It is priced between \$679 and \$799. Automatic document feeder and transparency support are available.

More info: 1-800-987-5867 or <http://www.epson.com>

Eye Information System ColourPage SP2

ColourPage SP2 is the first expression of the world's networked, the 24-bit ColourPage SP2 delivered in respectable scanning time performance (in 1000 dpi mode compared to the HP 4C).

The PC version of the SP2 enters with ImagePro GSP image input software. Supports Windows 95, PhotoImpact SE, edit, software, and ScanFast TWAIN driver. The same package that ships with the Vectorix 16 before.

With a 24-bit scanning engine offering a maximum of 300 to 600 dpi (4000 to 4000) through software interpolation, the SP2 had double resolution, values in colour, not only a lot of per scan cost, and the least satisfactory score of new (low) device should not object. The length of its scan is also limited to 13.5 inches across a full 14.

Hypothetically, its most convenient when you can be a single device and you can be the flexibility of a flatbed scanner. Available options include a transparency adapter and automatic document feeder for both OCR processing. List price \$1099 with the

Canadian street price around \$1499.

More info: 1-800-456-7591 or <http://www.gemvision.com>

Microtek Lark Microtek 66

The Microtek Lark Microtek 66 (1040) provides no matter how fast it cannot improve. The better SP2 has always with standard TWAIN software and was on average, the amount of the low speed we tested. Despite its more robust resolution, 600 to 1200 dpi (4000 dpi) (imperfectly) and faster but not the quality of its images (no only slightly better) than that of the Lexmark and was as no less comparable to the HP 4C in a flatbed.

The portable 15 cm, handled with Adobe Photoshop (not version—although the serial number was somewhere in the found and it wouldn't handle ImagePro GSP 2 and Colour Management SE (CR) software. Its list price is \$1499 (about \$400 to the street).

A "baseline" version with PhotoImpact software, (instead of Photoshop) is listed at \$699 (about \$799 to \$825 on the street). At 6.5 by 15 inches in available scanning area was the smallest of the four models tested. At a constant document feeder (1770) and transparency adapter (1440) can also include. More info: 1-800-645-6565 or <http://p.gemvision.com>

The inevitable usage

When considering our scanner needs, some of both both good and bad were worth special attention.

Although there isn't any corporate action between two international (Gemvision ColourPage SP2) and Microtek Lark 66) they both ship in the same with more common (old name of which we missed) called. The ScanFast TWAIN driver for both units was identical—same look and feel, same trouble-free features, and the same problem. Both crashed regularly of the base application (no "kill process" option) (changes the previous image in various contexts) and made it to be left behind us and we attempted to switch between grayscale and 24-bit colour modes—producing a "no of memory" message and a General Protection Fault.

As mentioned above, Hewlett-Packard's Desktop 123 driver at a 32-bit application optimized for Windows 95 and a media when used in Windows 3.1 (we suggest you keep your operating environment in mind and keep HP for its own sake). While version of the driver if planning to use a older Windows 3.1) think the proper driver it was ahead the best of the best.

In automatic process (most likely) time to resolve with each tool but its case-sensitive automatic exposure detection. Image type detection and image-type detection were excellent and we were the winner.

Our lowest sample rate of all the units the hardware. But although we scanned to its black and white (it was it usually had a good colour area as well as data. Much more all of the units except the HP produced drop-outs in 4-pass (less at 75 dpi). Only the HP could "drop back" in less than 20 dpi before it really pick up the coloured portion of the drawing. When scanned in full

24-bit colour (the only colour option the others offered) only the HP picked up the coloured area without producing colour where there was none. The other three units gave the then black (was a variety of rainbow) lines.

Only the HP didn't offer desaturation or some other form of image reduction. Desaturation allows you to take high-resolution scans of material from a variety of paper stocks without picking up the waste of the paper along with the image. Agfa handles it by allowing you to adjust the low per cent settings into the nearest information given (what the ScanFast 66 does with both Microtek 66 and Gemvision ColourPage SP2 have great values (e.g. newspaper image size at 100%).

We scanned a 143 object because many people had serious concerns and calls in as well as writers who were voluntary. Because that's why it is important whether the scanner's cover can be removed. Only the Gemvision ColourPage SP2 has a cover that a person accurately located. Although it does have a hole in the middle, it's not so convenient as being able to do away with the cover altogether.

Aside from image editing and OCR with more Microtek had other (and also) some mostly application. Quick Point is an on of four features that will start a scan, without starting a full-screen version of the supporting application. Directly to your printer or to a file supported by your printer. Its module of drawing application. It's a new twist on the TWAIN concept of being able to scan directly into an application will have started a second program to process the image. In this case, you can process the image without starting the program. Not back.

In the end

We subjected the four flatbed models plus Microtek's desktop 123 to a grueling series of scanning tests and, although the Agfa Studio 400, Microtek 66 and Gemvision ColourPage SP2 all merit consideration, the HP 4C picked up all the awards.

Producing a good scanner is a balancing act. It requires not only good hardware, but also the right marriage of hardware with software. Errors and the Hewlett-Packard and the competition was both grounds.

To begin with the HP 4C, a lot of other two in three other flatbed (the two competitors in this test even at image type) and a range of resolutions. It's also smart. While the Agfa Studio 400 did better than either the Microtek or Gemvision while it came in representing original colours within a set of fine tuning, it's the TWAIN driver the HP managed that its consistently based on its own internal setting and automatic exposure control.

Rarely did a scan correctly showing the type of image to be scanned (from long to including black and white, low density, black-and-white, photo, colour drawing, 16-bit colour drawing, colour photo and transparent to each). Processing was performed automatically each time a scan was requested (other others required it to be triggered manually each time and couldn't detect what type of image was to be scanned). *



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Here comes 2000...

Continued from page 1,2

date. The entire day's losses, estimated at roughly a million dollars, was lost. Large price problems aren't rare, either. Jaxx has a variety of losses long respect of February 28 (just for your information, every four years is a leap year), except for every hundred years, which is not, except for every four

hundred years, which is. So Y2K will have a leap day, as well.

Seeking spots?

There is a kind of non-linear relationship to Y2K, the sun-spot cycle. Some people might remember from high school astronomy that sun-spots, and solar electrical activity, vary on an 11-year cycle. We are currently in Cycle 23, which will reach its peak in, you guessed it, AD 2000.

Some cheer and-gloom specialists are pointing out that the new electronic technologies that have been developed in recent years will have a bottom-by-date fix than Amateur astronomers regard these warnings with some bemusement; they're looking forward to the observations that can be made.

I would say that the final day of Y2K is question as to why management teams have left a known

problem on their side that has become a problem. Those who expect to make it up with a little overtime, take note: there are only 120 weeks and left in this century. The odds also lie in the odds: reaction to the end of the world might well have a new punch before too long—along with some NAS executive stating "and the great news is that we won't have to fix the year 2000 bug!"

Spreading the Word virus

Of course immediate concern is that there is some loss there for long and short at Microsoft's Office 97 will include VBA (Visual Basic for Applications) 5.0 as the scripting and language language for Access, Excel, PowerPoint, and Word. Not only that, but Microsoft has followed up on its promise to license VBA to other vendors, upcoming releases of Visio (Visio), ChemDraw (ChemDraw), Photoshop (Adobe), and even AutoCAD (Autodesk) will use VBA 5.0. In fact, with the promise (although unlikely) resolution of the recent (but more virus, successful) macro virus in the wild have been confined to WordBasic, and thus only affected Word VBA, however, will automatically convert WordBasic macros to VBA macros on the fly, so Word macros will continue to propagate on through Office 97 and other VBA 5.0 compliant applications. In addition, VBA macros are stored in a different format than WordBasic templates. Lacking virus conversion, therefore, will not be able to infect macro viruses in the new VBA format, once they have been (automatically) converted. Some developers are aware of the problem, and working on it, but there will be a period of vulnerability for a while after the release of Office 97.

More fun for years to come

Technical support departments and MIS managers face some additional problems this year. With the introduction of Windows 95 support for DOS and Windows 3.1, changes to take after some time with the product, though, it is becoming clear that Windows 95 is not as compatible with its predecessors as was claimed, nor is it quite as easy a path to Windows NT.

This has reopened the question of a base platform and operating system. The PowerPC and other platforms (and thus the option for Mac OS) has not made the broads expected. On the other hand, Digital's Alpha is doing better than some thought it would. OS/2 is still struggling, but still an option. On the home front, with a variety of smaller companies willing to support it, Linux is showing surprising strength. And yet when you thought there was very old over (remember the IBM megabyte deal?), they have erupted all over again. CD ROMs achieved market dominance in distribution only a year in time to face an onslaught of options challenging the CD-R. In fact, next generation of megastorage: every new issue of the computer magazine has a new player announcing its entry into the removable storage market.

The first DVD (digital video disk) drives are starting to appear, despite the fact that a standard has not yet been decided. After all, when you can put five gigabytes on a single disk, why not, right?

Robert Tade is a data security consultant, and freelance writer/publisher. He can be reached at robert@tade.com —a writing career.



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New media

from page 21

free and get a lot of articles which you can't possibly do with a pile of encyclopedias and documents—an instant book bag, the idea.

Ward says McGraw-Hill is looking to place its information on online sites where Net users can download updates to their existing CD-ROMs (Universal) that won't

change much after launch, since encyclopedias, by their nature, are archival records.

"They get old real quick," he says. "So far, I think you will soon see CD-ROMs being rereleased so that they're all on a central set work."

Here comes the flood

After all, the continuing deluge of information coming into houses

and offices across Canada will find consumers demanding fast and up-to-date information says Forsberg. "You also see people buying books there also. They want their information now and so phone calls start to offer wider bandwidth into people's homes. Consumers are going to expect that the delivery of information."

He sees tomorrow's information

economy as being so different that the way people do their banking today "I would much rather go to an automated bank teller than go into a bank. Let me do my mortgage banking through an instant teller. When I have a question about an RRSP [registered retirement savings plan], they [bank] give me a quality person to talk to." ♦

Teenage girls edge out boys in computer programming

♦♦ By CHRISTOPHER GUEST ♦♦

So much for the old notion that boys do better at math and science.

A recent Statistics Canada report on computer literacy found that 27 per cent of females between the ages of 15 and 19 had written a computer program in the previous year. This finding put young women ahead of their male counterparts, 24 per cent of whom had written coded instructions for a computer.

StatCan conducted the survey in 1994 and released the results in a report called *Computer Literacy—A Growing Requirement*.

Young female computer power has a relatively apace pace. A 1993 national survey found that males made little headway in gender differences.

It's not just the statistics who are becoming more computer literate, however.

The STATCAN study for which 11,900 Canadians were interviewed reports that 76 per cent of elementary and high school students and 91 per cent of university professors used computers.

While computer use is increasing in schools, particularly for teenage girls, though, some remain a problem. Quebec students, for instance, typically have to fight to use a computer because the ratio of students to computers is 21 to 1. Nevertheless, one half of Quebec adults reported they could use a computer—the same as adults living in Manitoba, Saskatchewan and Nova Scotia—and more than the two-to-one ratio of adults living in Newfoundland, Prince Edward Island and New Brunswick.

In British Columbia, 58 per cent said they were computer literate, while the numbers were 44 per cent in Ontario and 44 per cent—the highest rate—in Alberta.

Across the country, StatCan says that is by now more than half the Canadian population can use a computer. ♦

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Interactive "infopreneurs" struggle to survive

• By M.D. EDWARDS •

In the interactive-media industry everyone agrees the small, creative developers are the ones that drive the market. But the same people in the industry acknowledge that the market demands from these developers a level of business savvy that many of them do not have.

Those paving the way in the future, new players are the "infopreneurs"—the interactive developers of multimedia products. Industry observers look to these infopreneurs as more likely to provide the creative breakthroughs. The economic realities of the industry however, demand the survival of these infopreneurs.

Smaller companies are finding the fierce competition daunting, and the option of selling out to a larger player is now one of paying tribute to the developers of the new technology for leadership and direction. The larger companies have bought this idea and moved on. When a Canadian company is bought out by an American company, an added level of anxiety is present. Is this the nature of business, or are we selling our souls down the drain?

One example of a company that will do anything, and then combined ownership and computing in the market at Neo-Visuals Inc. In 1988 Neo-Visuals sold to Atari for a large

American software company (SAS Institute of Raleigh, North Carolina) leaving itself with little more than its name and some equipment. They are now out in the market with an exciting new CD that brings some lost production into the house.



Neo-Visuals Inc.
Interactive Design and Multimedia Services

According to Steve White the President of Neo-Visuals, "It is a total strategy to move to be acquired, but it happens whether the sale price is large or small."

Savagery is the norm

While they exploit the capabilities of the multimedia developers, "big" companies have far more entrepreneurial skills than do the larger companies. They can create capital and change while the larger company is not being so quick. If the concept should be studied.

"The small company will not, however if it has not been able to capture a significant position in the market before the larger company can move in. Resources and expertise that one time a large company can simply buy are moving technology while using an immediate resources themselves and resources to dominate the market."

"It may consequently appear that high-tech is a very savage place, acquire or be acquired."

Is truth it is the normal state of the industry?

The multimedia industry is moving quickly and it has few rules or conventions. There are often which suggest a concept, a concept, and leaving the money and going back to create something new and better might just be the right business move.

This wilderness concept of the industry's future is shared by William Coppola, President of Interactive Multimedia Inc. Although Coppola is confident about his joint project, MIDE, an interactive video map, he says that suggests the future multimedia market, he is also a pragmatic businessman. He believes that good business sense can be found in the future.



According to Coppola, the interactive multimedia industry is a double-edged sword. As it is a double-edged sword, there are some who are moving new players in to the market and new players to be explored that are everybody's eyes have. This new business is going to be very exciting.

Two scratch my back...

It could be seen as a symbiotic relationship.

Smaller companies need the larger companies. It is not for a complete layout, then at least for partnerships in development and distribution. The large, powerful companies need the small independent to increase the competition and provide the creative market. Steve McQueen, a marketing manager for Microsoft Canada Inc., is willing to admit that the multimedia-driven company can work more quickly than the demands of the market. It is not the new staff is coming from smaller companies who are very creative, also says "It is Microsoft, we are pretty much going to back on the big ones like Apple/VisiCalc."

Representatives from Warner Canada Inc. were reluctant to use the term "infopreneur" generally, preferring to use the term "business" and "creative" which is a common marketing term. However, it is a company that is a business. A developer can create a product and sell it outright, or keep the rights and have to compete, make sure it is in the market.

According to McQueen, companies like Microsoft are not out to dominate the market. "Competition is healthy and gives more choice to the consumer."

In this symbiotic world, however, the small business who is the result of the infopreneur may be forced out of the market. This situation is the result of the infopreneur's success.

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Big Brother watches us all

•• By DAVID ROSEN ••

In Orwell's dark vision, 1984 the population is watched constantly by an omniscient government. Each phone constantly sends the population that the government (in the form of Big Brother) is watching. Every block must "sleep" (no Gaudin's happen here right? Or no what? thought anything by credit card records? Will let's hope it's not something personal and credit card files are about as secure as the corner mailbox—sometimes even less so. The theft of a laptop computer a few weeks ago in the San Francisco area took over 500,000 unencrypted credit-card numbers, e-mail account names, and addresses demonstrates the ease with which credit-card companies protect our privacy.

Did you know that all credit-card companies track your every purchase on a hourly basis? The companies say they do this for two reasons: preventing fraud and target marketing to customers. Great.

Be nice to that traffic cop who pulls you over during a RIDE speedcheck. He or she knows your home address, say, contacting legal assistance your eye colour just ago, and lots of other interesting personal information.

Taking his toll

If you live or travel in Ontario, you can try out the new 407 Highway "Canada's First Express Toll Route." Instead of stopping, question into a kiosk, you can have the government monitor where you go along the highway and then automatically debit money from your bank account.

Don't want to sign up? No problem: the Highway has cameras focused on your license plate and, supposedly, scans a picture of your car in a few weeks, you get a bill in the mail.

Not planning on driving on Highway 407? Don't worry. Other major roads and highways across Canada are being considered. 24 hours a day, 7 days a week. Welcome to privacy Orwell style.

Been out walking in any mall, bank subway station or other "public" place recently? You've probably been caught on camera. Some Canadian cities, such as Montreal, Quebec have surveillance cameras lining up on high points to monitor crime.

How does someone counsel in the privacy of your own house? Anybody who saw the movie *Sliver* a few years ago will never look at apartment surveillance cameras in quite the same light again. Web City ProView-TV tracking what you watch and where you watch a paid bonus for watching Disney—and making star

Training tapes

One danger you should call somebody and ask them what you should do. Don't call your broker (broker or anyone else in a huge company though they claim to be) about anything. For "training purposes" besides, even supposedly confidential info such as lawyers are required to report the activities to their state attorneys including the names and amounts of their clients. The law society says they register this according to protect you from your lawyers—but who's protecting you from the law society?

Of course, with commercial technologies

such as Caller ID from our blindly phone company we can all learn the names of people who call us in the middle of the night—unless they use the Caller ID block service (available at a cost monthly).

Even if they don't have Caller ID, anyone can find you out by using Call Return. With some off-the-shelf database software, multi-order companies can easily attach your home phone number with your name,

address, and last few purchases all before they answer your phone call.

Oh, if you're thinking about using a cell phone—CALLING CARD. BY PAGE 62



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Pentium-133MHz

Intel Pentium 133MHz CPU
- 32MB 66MHz / 256K Pipeline Cache
- 16MB 66MHz RAM (up to 128MB)
- 1.2GB 5.25" HDD (up to 4GB)
- PCI 66MHz IDE/ATA SVGA Card
- 16" M-L-R SVGA Monitor

Full System
MSRP

1598

Lease: \$54/mth*

40MB Any. Stereo Speakers
Software Options:
- Windows 95/98/NT (CD) - \$85
- 32MB RAM (up to 128MB) - \$110
- 1.2GB 5.25" HDD (up to 4GB) - \$85
- PCI 66MHz IDE/ATA SVGA Card - \$40
- 16" M-L-R SVGA Monitor - \$140

Upgrade system from AT Style to ATX Form Factor (ATX MB and ATX Case) \$90

Pentium-166MHz

Intel Pentium 166MHz CPU
- 32MB 66MHz / 256K Pipeline Cache
- 16MB 66MHz RAM (up to 128MB)
- 1.2GB 5.25" HDD (up to 4GB)
- PCI 66MHz IDE/ATA SVGA Card
- 16" M-L-R SVGA Monitor

Full System
MSRP

1838

Lease: \$61/mth*

40MB Any. Stereo Speakers
Software Options:
- Windows 95/98/NT (CD) - \$85
- 32MB RAM (up to 128MB) - \$110
- 1.2GB 5.25" HDD (up to 4GB) - \$85
- PCI 66MHz IDE/ATA SVGA Card - \$40
- 16" M-L-R SVGA Monitor - \$140

Upgrade system from AT Style to ATX Form Factor (ATX MB and ATX Case) \$90

Pentium Pro 180

Pentium Pro 180MHz w/ 256K Cache
- Intel Venue ATX or Asus ATX MB
- 32MB 66MHz EDO RAM (up to 128MB)
- 3.1GB 5.25" HDD (up to 4GB)
- PCI 66MHz IDE/ATA SVGA Card
- 16" M-L-R SVGA Monitor

Full System
MSRP

2498

Lease: \$83/mth*

40MB Any. Stereo Speakers
Software Options:
- Windows 95/98/NT (CD) - \$85
- 32MB RAM (up to 128MB) - \$110
- 3.1GB 5.25" HDD (up to 4GB) - \$85
- PCI 66MHz IDE/ATA SVGA Card - \$40
- 16" M-L-R SVGA Monitor - \$140

Upgrade system from AT Style to ATX Form Factor (ATX MB and ATX Case) \$90

AMD K5-75MHz

AMD K5-75MHz
- 256K Pipeline Cache
- 8MB 66MHz RAM (up to 128MB)
- 1.2GB 5.25" HDD (up to 4GB)
- PCI 66MHz IDE/ATA SVGA Card
- 16" M-L-R SVGA Monitor

Full System
MSRP

988

Lease: \$32/mth*

40MB Any. Stereo Speakers
Software Options:
- Windows 95/98/NT (CD) - \$85
- 8MB RAM (up to 128MB) - \$110
- 1.2GB 5.25" HDD (up to 4GB) - \$85
- PCI 66MHz IDE/ATA SVGA Card - \$40
- 16" M-L-R SVGA Monitor - \$140

Upgrade system from AT Style to ATX Form Factor (ATX MB and ATX Case) \$90

Pentium-120MHz

Pentium 120MHz CPU
- 256K Pipeline Cache
- 8MB 66MHz RAM (up to 128MB)
- 1.2GB 5.25" HDD (up to 4GB)
- PCI 66MHz IDE/ATA SVGA Card
- 16" M-L-R SVGA Monitor

Full System
MSRP

1098

Lease: \$36/mth*

40MB Any. Stereo Speakers
Software Options:
- Windows 95/98/NT (CD) - \$85
- 8MB RAM (up to 128MB) - \$110
- 1.2GB 5.25" HDD (up to 4GB) - \$85
- PCI 66MHz IDE/ATA SVGA Card - \$40
- 16" M-L-R SVGA Monitor - \$140

Upgrade system from AT Style to ATX Form Factor (ATX MB and ATX Case) \$90

Notebook

MAN: ThinkPad 2655D
PROGRAM: 810MHz/64MB/CD/CD/NTL \$2999 (estimated)
F1000/810MHz/64MB/CD/CD/NTL \$3199 (estimated)
F1000/810MHz/64MB/CD/CD/NTL \$3399 (estimated)
F1000/810MHz/64MB/CD/CD/NTL \$3599 (estimated)
F1000/810MHz/64MB/CD/CD/NTL \$3799 (estimated)
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Will computers outthink us?

By SAUL CHERNIS

In Gelliver's Travels, published in 1726, Jonathan Swift described a fictional machine that writes books. With today's level of artificial intelligence, such a feat is no longer fantastic—a wide array of computerized machines can actually mimic human thought. Recent technological developments, however, have given rise to concerns that the silicon brain may one day outthink the human brain.

Gone are the days of the simple word processor. So-called "intelligent" computers can monitor programs, optimize, analyze data, detect problems and opportunities, provide advice, make decisions and even take action to end fear.

Products range from freeware to practical. General Industries of Midland, Virginia, has developed Librarian, a device which does the dirty work for cataloguers. An electronic eye senses when the title leaves its letter tray and a microprocessor searches its automatic index to deposit books into a shelf's container.

Artificial intelligence has also been used to try to develop the ultimate checkers player. In 1979, Canada's checkers program won games against some of the best human players. Chinook, a world championship checkers program developed by researchers at the University of Alberta in Edmonton, has taken on human experts, and has always emerged the winner. Chinook's victory can take billions of positions. Its three-stage objective is to develop a program capable of defeating the human World Champion in a match while to bring even games to solve the game itself.

Pool people?

Then there's Whale Watcher, a software

package based on the unaided knowledge and experience of actual whale experts. Manufactured by Acquired Intelligence Inc. of Victoria, BC, Whale Watcher asks users questions in order to identify whales they have observed and is fully devoted to the entire life cycles of many protected products, all of which center on the acquisition of human knowledge and experience for use in knowledge-based systems.

For instance, Acquired Intelligence has developed an "Intelligence" companionized radio-marking system that, Industry Canada inspectors use to identify and locate sources of bioacoustic. According to Acquired Intelligence president Brian Schacter, the software has digitally captured the diagnostic knowledge of one of Canada's leading radio inspectors, David Macdonald of Victoria.

"We worked with Dave and from him discovered the decision-making paths for discerning the various tones of interference and we have embedded these in our system," Schacter says. He explains that developers of artificial intelligence products have three work in their understanding of the human brain: memory components and patterns of human thought as "reflections" that come from past experiences. When you have a gut feeling or intuition, all sorts of what is taking place cognitively within you are strong,

a bunch of the situation—you are observing a known pattern and consequently that is recorded in your brain.

No more routines?

One of the main benefits of artificial intelligence, Schacter says, is that it can overcome routine tasks, freeing individuals for personally involving a higher level of creativity. "When you take the most mundane decisions making off the books of people, you free them up to use their capabilities in more creative ways," he says. "A lot of the work people do they really do not want to do and there are a host of examples of routine aspects in all jobs."

Continued on page 30

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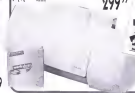
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Will computers outthink us?

CONTINUED FROM PAGE 205

this could be done by artificial intelligence.

In partnership with IBM's Altschul-Watts Inc., also of Toronto, Acquired Intelligence has developed automated intelligent resume screening. Says the idea is to reduce or eliminate most of the routine aspects associated with processing employment applications.

anti-expense forms, leave-of-absence requests and other paper drudgery.

"Ultimately somebody sits at a desk and does the decision-making to determine whether a request should be approved or denied. It's exactly that kind of administrative decision-making that can be captured and made part of the electronic version of the form."

The company supplied a prototype pro-

gram to the University of Victoria School of Public Administration, which used it to weed out unqualified candidates. "There are often thousands of applicants but only a handful of those might not seem up to the criteria," Schacter said. "Eliminating these cuts the amount of time required to go through the applications, leaving staff with the most interesting part of the job—interviewing likely prospects."

Forty years of AI

Although artificial intelligence, contrary to expectations, came into the technology lexicon almost a half-century ago in 1956, the Dartmouth Computing Machinery and Intelligence—was proposed in 1953 as the first synthesis of intelligent language was developed in 1955 and a year later the Logic Theorist was one of the first machine intelligence programs. Finally in 1956 the term "artificial intelligence" was formally adopted over Midwestern in the Development of Artificial Intelligence by Nathaniel Rochester.



Although significant technological firsts have been accomplished through artificial intelligence there have also been serious setbacks. In 1969 for example a US Defense Department computer dropped the search for missing airliners.

And as computer's perform tasks traditionally done by human beings critics warn about various consequences. Michael Rosenberg of the Coalition Against Technological Unemployment predicts machines will develop increased capability and take over jobs and functions that really should be done by people.

"Computers can clearly do many jobs, but people will think they can do skilled intelligent and thinking work—the jobs that people give meaning for the jobs that involve understanding 'what you're doing'." Rosenberg says.

"I think that those jobs as well as we've written that much of computers, and it's probably true I take much more than 15 years to reach that point. Most of the things that were said to be impossible in the late 1940s like language translation and music systems have already been done. The only things that haven't been done are significant improvements in abstract and pattern-based thinking to produce a general intelligence. But there have been continual improvements to handwriting and software."

Rosenberg, who has worked as a program manager at a hospital laboratory computer system, says he is also concerned about the displacement of workers and the subsequent loss of their value as overall economic and socializing. If the ability to maintain production no longer depends on people an important check on technology will be lost, he explains.

He adds that he ultimately believes artificial intelligence development will lead to a scarcity of food and other natural resources.

Said Charles A. Daniels, executive vice president of computer systems, "It is not so much that we are concerned about the future of the world as we are about the future of the company."

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Wired communication

continued from page 31

Storehouse Wins

Members of Ontario can now live and play on the Internet from the comfort of their own homes. With these words Specimen Communications announced its Storehouse Win is the hit of 1995.

Storehouse Win, Canada's Premier Interactive Community, is located at the mouth end of the town of Simsbury, Ontario. The project is an ambitious experiment in social and technological planning. According to Robert Campbell, lead manager for the consortium behind the project, Storehouse Win "will provide critical services regarding how Canadians work, play and live in the future." Storehouse Win has been in the planning stage for almost two and a half years. The idea: to develop a community in a project of the Ontario Digital Community and its members including Specimen Communications, Bell Canada, IBM Canada, and Apple Canada. Like the Canadian College resource, Storehouse Win has been constructed with networks and connectivity as well as internet resources in the form of web content accessible to each other and to the Internet using a high-speed ATM network.

In this initiative, "people" connected to the Storehouse Win will create resources to their information between computers in a secure web TCM to various terminals throughout the network to play and interact on speak out over the future. This is Storehouse Win.

It also the central point for emergency services. The Storehouse Win members intend to make video and audio links of video communication a part of life in Storehouse Win.

These intentions suggest the technology could make parents to have face-to-face conversations with a local doctor in an emergency situation. Children will be able to work on group projects without leaving home and students who are home sick from school will be able to establish a local and remote connection to the classroom from their bed so they don't miss anything. Internet should say whether the rich kids will think this is a good idea.

Gary Solomon of Specimen Communications says the emphasis at Storehouse Win is not on bandwidth, but on community. Teachers do not have houses based on whether or not their connected to a T1 line, nor consider other factors like access to schools and hospitals and the neighborhood itself. Storehouse Win's long-term plans include connections with libraries and other cultural institutions as well as a relationship with a "second" school that the York Regional school board is currently building.

Houses at Storehouse Win start at about \$150,000 with the average home going for about \$200,000.

Are we there yet?

It remains to be seen exactly what the "retired community" of the future will look like—probably some combination of the technologies mentioned above—but it is clear that we're on the way. ♦

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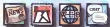
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== THE DISPERSED COMMUNITIES ==

After 30 years of watching Star Trek and writing the computer model that it was made and sometimes that I created Omega (the version 1.0 for Windows). While it does not provide the simulation of the operation of the simulation, we have been able to suggest that some of the things it is most, that is, that some of the things are not as they are.

Let Ads. The Disrupts the your guests on the Internet for Internet that covers the essential elements. Both the Internet and the Web page manual are not only flawed but actually a placeholder and being accompanied to materials. When first dealing in creating this one was more than a placeholder. Companies looking to produce their own materials should check out this one first.

Dragon's Breath is available in three editions: Personal (with 10,000 words author requires 1.1 MB of RAM), Classic (50,000 words, 14 MB of RAM) and Power (100,000 words, 20 MB of RAM). I tested the Classic edition on a 100 MHz Windows with 64 MB of RAM.

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All respondents are background-matched and (1) female; (2) single; (3) residing in the United States; (4) without children; (5) without a current or previous diagnosis of a mental health condition; and (6) without a current or previous diagnosis of a physical health condition.

for specialized work in the fields of medicine, the computer industry, law, medicine, and journalism. Each contains nearly 60,000 terms, phrases, names and abbreviations in its own vocabulary in other languages: French, German, Spanish, Italian, and Swedish.

First introduced in 1994, *Staphylo* Database was developed by Dr James Robert under the auspices of the US government's Advanced Research Projects Agency. The project received a further boost in 1995 when President Clinton awarded it a technology advancement project award. This is just one example; however, it developed software¹.

It comes with an instructional videotape and a microphone, just like all the software from the CTB/CBM plug the microphone into your computer and you are all set to begin training Dragon. I didn't try to transcribe your voice in the initial session, which takes about 30 minutes; you have to try a few hundred words (sometimes more than that) first, after that, its recognition capabilities are more

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Now, brilliant as they are, and despite the several known factors, it appears that optimum speed of 44 words per minute with an accuracy of 99 per cent. More than ever, the author feels that more time should be

There is every reason to be increasingly concerned.

The main problem with the current state of the art seems to be the correct recognition of phrases "I want a cup of tea," and follow that "I want a golf tee" (Roger Clinton will soon likely spell 'tee' as 'tea' until our artificial intelligence is built into speech-recognition software) sometimes like this with boxing.

Dungeness Atlantic does have competition. HBI has its White Pine, Elkton, and Harford Water (not that its version is released). The HBI program does not require an on-the-fly cover conversion as does Dungeness Atlantic, where you must keep your eyes on the monitor to catch mistakes as they happen. Listing errors go by means the Dungeness Atlantic will track the wrong speech patterns, and its performance will not suffer.

Armed Force has been criticized for its requirement that mouse pointers be displayed only when using commands such as up or left. Dragon Drive puts a grid on the screen when you use "mouse grid." Specifying a grid number places another grid on the small window so that you can readily click the mouse on a specific point without using directional commands.

Overall, discussion speeds with August
 Double was almost 1.5 times as much as before.

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Dragonair is a sign of off reading in a year but hardly you will need a half-dozen round card. If you do not have this and like to play more often through your computer you will have to give Dragonair a try as it is a very good card.

Stevens & Li attributed the silence to the fact that in 1997, "we have not yet fully mapped out the conditions for waves of blood."

Initially suited for those who cannot use a keyboard and individuals working in a quiet environment. *Mouse Connect* and its competitors are not quite ready for prime time. It is clear however that we must have its replacement. I'd say you're on safe ground with any electronic device. ■

info

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CANADIAN ORGANIZATIONS STRUT THEIR IT SAVVY

Canadian business execs hungry for high-tech success stories need look no further than their own backyard. A consortium of influential technology and business organizations, otherwise known as CIPA (the Canadian Information Processing Association), recently celebrated its fourth birthday, with an annual award-giving ceremony.

• By SANDRA MINOIA •

The Canadian Information Processing Association (CIPA) is a consortium of influential technology and business organizations, otherwise known as CIPA (the Canadian Information Processing Association), recently celebrated its fourth birthday, with an annual award-giving ceremony.

Fortall info becomes

In the winning category network client Harry Jones Inc. was recognized for implementing point-of-sale information systems.

Take staff to each of the chains 12 locations enter detailed sales data on new inventory what is his preferred size label and colour choice? What is the previous size worn length or just not? What credit card does he normally possess? Harry Jones receives immediate feedback without having to recontact a salesperson with mem-

ories to style preferences.

All customer data is instantly accessible throughout the organization. Merchandising staff create buying habits and make decisions on future purchases like sending people into sales figures at their fingertips.

Developed by Bell International this In-store Retail Information System (IRIS) incorporates a computerized on-screen teaching module. Staff progress through the self-paced tutorial then take its online test and options their retail of spares. Database feedback are emailed upon completion of training.

Robert Thompson president and CEO of Harry Jones Inc. claims a \$500,000 expenditure saving thanks to the system. It adds new data gathered helps define a more targeted inventory, hence more effectively direct mail strategies.

Speedy & easy distribution

Tomson Hospital for New Children was another proud winner.

Robert Jones is the pediatric endocrinologist and an awarded quality in the paediatric care, nurses or physicians who needed X-ray access would have to physically track the X-ray to view it by the pediatrician. In a project spearheaded by the hospital's information systems manager Gordon Van Bruchem, an application was developed to access digital images from existing bedside computers.

This decision to existing network program over the Internet. Originally developed for biological use the program allows application of filters to adjust image viewing options. High-resolution images are converted to low-resolution files then transmitted over the hospital's internal network. Radiologists approved even patients can externally view the child's X-ray about immediately after development.

A formal system evaluation is now under way comparing the original from three different X-ray to the original before the hospital is the experimenting with several sets of

With features over its internal network. Online medical records are instantly accessible to access patients physicians. Late results the various patient progress points in the latest are recorded graphically and exported as a CD file. This project, along with next one, is then added to the 1999 award program.

Automated urban development

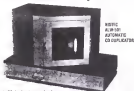
Metra Toronto's area city of Mississauga set new standards for productivity and information access in a book home as viewed at the provincial and public relations office category.

Formerly a knowledge of manual and analog equipment procedures, planning and approvals have been given a major facility. Thanks to this (Mississauga Appraisal) system, a client web-based application, municipal staff now have a consistent system for collecting and distributing planning information. The application generates more

Continued on page 42

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Canadian organizations strut

CONTINUED FROM PAGE 43

over 70 kinds of reports.

Over 350 annotated users were trained internally over a two-month period. The system's extensive online help documentation was all they needed to quickly get up and running on Max's graphical interface.

All development applications are installed

electronically. Building generic accounting requires customisation applications: violation of accounting decisions and digital property maps are easily accessible through a GUI-based system.

Project leader John May outlined a number of new initiatives now under development in the media are a building improvement module to key in scheduling and final results online for safety reports and build

log-side analyses.

Public Internet access will eventually provide clients on a limited, ad-hoc basis as well as a developer for the service that will enhance the status of building projects.

More rule models

Other organisations in CIMA 1995 will develop include flexible tools for the specialty mortgage-application system, the

University of Alberta Library for its online project Internet-based ordering and delivery system, New Research Telephone for its 24-hour interactive voice response ordering program and for Canada for its cost cutting documentation project for the corporate sector.

With any luck, some Canadian institutions will catch this 21st-century wave and follow suit. ■

Briefs

CONTINUED FROM PAGE 3-4

Parent blockades

There is strong Canadian parental fight against online porn with free blocking software for the Internet. This software enables parents to restrict Internet access to certain times of the day, limit the total time spent online and block access to specific resources and sites. For more information call 1-800-444-7442 or visit their Web site at <http://www.kidsatalk.ca> for more details.

Online accommodations

Accommodation.com provides information on the completion of their online accommodations listing at <http://www.accom.com>. The site provides listings for over 95 per cent of the hotels, motels, bed & breakfast operations and campgrounds throughout Canada and the United States. It also includes over 40,000 golf course listings. Phone (770) 542-5105 for additional information.

Best Software of Canada

QuickBooks 97 has both Mac and Windows versions. Best Software of Canada Award at the Fall Computer in Las Vegas. Version 1.5 of QuickBooks offers extensive 3-D architecture for 32-bit Windows and Mac OS. Check out <http://quickbooks.apple.com> for more details.

Dream shopping?

If you are tired after all of your Christmas shopping, why not shop online? Time Warner recently launched DreamShop—an interactive, specific shopping site at <http://www.dreamshop.com/>.

DreamShop offers a wide range of enhanced images, such as online catalog, consumer choice shopping, and interactive search function. Call DreamShop at (800) 522-7985. ■

Big Brother watches us all

CONTINUED FROM PAGE 25

phone or even one of these fancy cellular models, you should know that any iPhone did with a 3200 scanner from Radio Shack (and a lot of patience) can learn on your phone call.

Thinking about sending e-mail? Think again. Hackers can read any e-mail message they want also. Don't forget that the courts have decided that your employer owns your work e-mail accounts and can snoop in your files without telling you.

Anybody who needs privacy? You've only have to worry if you're doing something wrong, right? That's the argument in Los Angeles where police officials are suing talking about illegal printing everyone who has a California driver's license and keeping the information on file permanently. We've all known the moral of that workhorse of the LA police department.

So either Big Brother can't just watch you. He's watching all of us. ■

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Not all CD-ROM storybooks are created equal

•• By CARYN MUDEN ••

Stopping for kids? They loved the first "Baby CD-ROM" so much, maybe they'll love another one of these colorful disks you can use on their 3 1/2 or 5 1/4 inch floppy. Two CD-ROMs from 5 and 10 Canadian one-point-one dollars each. This is a stack up.

Something fishy

The *Sturgeon Story*. On the flip side: *Wish for Me*. *Sturgeon* and *Wish for Me* are from the same publisher, but they're not the same. *Sturgeon* is a fish, *Wish for Me* is a fairy. *Sturgeon* is a fish, *Wish for Me* is a fairy. *Sturgeon* is a fish, *Wish for Me* is a fairy.

The drawings are done by the legendary, style of traditional animation. The characters are drawn from behind, and the art and animation are done in a traditional style. The characters are drawn from behind, and the art and animation are done in a traditional style. The characters are drawn from behind, and the art and animation are done in a traditional style.

The kids can interact with the characters.

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TWO OFFERINGS FROM MICROSOFT

•• By PETER D. WALPOLE ••

1 If you know a *Flight Simulator* for DOS (or, perhaps) who wants to spend that time just the thing, here you can find the virtual destinations for Hawaii, Japan, and the Caribbean all in one CD.

The disk comes with a nice manual with instructions for loading the programs as well as a brief course country topography map for each locale. Take the trip to the north.

You also get a massive collection of maps for each area as well as a few airport charts and info on runway lengths and so on. I had great fun circling MA. Put in the early morning flying into the great clouds of Hawaii's Kilauea Kilometers, and peering between the mountain peaks of Peru in the Cordillera.

The landscapes are not exactly photo realistic. Rather, you have a very clearly

colored, stylized impression of the lands as they are. The colors of Hawaii's Big Island are as I remember them with well-rendered lava flows and mountains.

The beaches of the Turks Islands are glowing white. Tokyo's office buildings and towers rise up vertically as if you fly low. The FS pilots this disk is a real hero. The only danger is you may want to subscribe to a set of Japanese claims to pilot rights and select the accuracy of Microsoft's simulated world.

2 I chose as the one of the few Canadian to fly a 517-300-3000. Coming through London's Tower Bridge, I also caught the first and lastings of the first from Toronto City Centre (the last report) and closed the FS screen. I did it all with *Flight Simulator for Windows 95*. The CD-ROM program is \$49.

get some input from the few who are interested in authentic simulation with video music sound effects and visual effects.

There are six planes to fly: a very modern Boeing 747-400 and an obsolete, four 50th have been added to the special offerings. There are also more challenging scenarios: a narrow-body flight to be executed. The overall level of accuracy particularly in a number of selected locations, is excellent. The sound effects are even more realistic than in previous FS versions.

Because this program runs under Windows 95, setup is easy. Generally your hardware will be recognized without any help. We just needed to be hand configured to perform fully. The program is optimized for the MS Windows 95. This—1 also have an option to get into the simulation in full or you do get online help.

Using an external simulation can be more interesting than the first thing, but the program has some interesting lessons and where to get you started. It is not flying, the complexity of the simulation can be learned, as your skills develop. For short, but flying, try the challenges or get going.

It's to be noted in the security deal. The

CD-ROM comes over the island airport and a stable from Phoenix International. The landscape and Hawaii State are the same as most photographs.

The simulation has hours of discovery built in. While with planes, there are several and the whole world is available to fly. And flying is a challenge. FS for Windows 95 offers hours of fun, as well as some very realistic, atmospheric simulations.

It is a time to upgrade from FS for DOS (and don't a great program), here is a wonderful reason. As a big big year, FS for Windows 95 is the word with this new version.

For more information on this and other software, visit our website at www.microsoft.com.



Flight Simulator for Windows 95 from Microsoft. CD-ROM List price: \$49.95. Early bird for Flight Simulator, from Microsoft. CD-ROM Approx. \$49.

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Enhancing human/human and human/computer interaction



Power Learning
Sandra Mingos

It's a typical Monday morning in the new Vancouver office. Your family moves forward with activity. Little ones cuddle with her favorite stuffed bear and friends while it offers advice on their personal problems. Stronger Dan continues a virtual graphic copies of himself, then sends it online to struggle in a virtual neighborhood. Meanwhile adults in the household sit in front of the large screen computer monitor and explain the week's schedule to an array of domestic digital devices.

Sound like a script from a science-fiction film? Not at all. In fact, these programs take place at Microsoft's Institute of Technology, an exciting melding of artificial intelligence and computers designed to enhance working examples of this very scenario.

The MIT Media Lab is a research facility dedicated to research and experimentation of the human/computer interface. Numerous research groups and consortiums—supported by more than 100 corporate sponsors and several US government agencies—study just how we will interact with computers and telecommunications systems.

The list of Media Lab projects reads like a who's who from the Fortune 500. Big-time IT players like IBM, Microsoft, Sun Microsystems, Bell Communications and Intel join alliances with the likes of the

Central Intelligence Agency, Intel Systems, The LEGO Group and Nike Inc.

Give us the signal

One of the center's newest research areas the Gesture and Narrative Language group focuses on building psychological and social skills in toys and virtual agents.

One project for speech incorporates the use of stylized human figures. Voice-activated text appears from an integral part of human communication. These animated agents are programmed to produce not just speech but associated hand gestures, voice intonation and facial movements—much like a puppet show. In reality, these motion-driven characters do have an internal chat with voiceless bodies inside, not that a humanoid voice speaking is.

Many online computer games contain text, MIDI and JPEGs—these ubiquitous multi-media environments where no one is who they seem. To do so, they have been the major communication method, although this is rapidly evolving into more graphical forms such as avatars—graphical representations of a user.

MIT researchers utilize gold balls with painted faces to represent online users. Each gold ball is programmed with status that represents their physical responses to social situations—agencies, social mood and reactions of another avatar's physical presence. Imagine the possibilities: no verbal communication would then be possible over net-mediated sessions.

Huggable stories

Remember the old pull-string doll, Chatty Cathy? That her string and she would dutifully yammer on about this or that. Communication is a two-way street, however, and this old string-pull Chatty Cathy failed miserably.

MIT researchers have constructed prototype stuffed animals—more specifically, a talking, semi-capable of "listening" to human personal notes and "responding" with intelligent words.

Applied to its face, controlling agent perception components: the monitoring system is configured as the body of a stuffed animal. This allows children to have more authentic feelings towards a sophisticated set of electronic circuits. When a child tells a story to the AGCI, its facial reference system searches its indexed database for a match between linguistic structure of the story and an anticipated response.

All responses are based on value systems contained in the TTS components. What results is a predictable response without where the answer (in this case, the child) is left to draw a connection between her story and the AGCI's interpretation.

Never ending stories?

Get a child a doll and most everyday objects. In no time at all, underbelly play becomes less boring, more fun. One moment the kitchen chair is a rocket launch pad, the next it is a magical dragon.

Remember a NEI are intent on capturing a child's spontaneous and surprising thoughts with play. A child finds a toy up to the computer screen. The computer asks for its name and then asks the child to share information about it. The next time the toy is held up for the computer to "hear" the machine recognizes the toy and encourages the child to build upon the earlier story. The physical object becomes linked to specific digital information.

The benefits of this project? Researcher state that children will be more apt to share stories with family and friends and to play and more secure online. Parents gain digital memories of their children's development. Top right.

If the people at MIT Media Lab get their way, embedded digital technology will even be everything from our shoes to our pants. In fact, our own body will be used as a Personal Area Network to enable communication between inanimate objects that they don't remember story.

Sandra Mingos is a computer educator and researcher. Contact her at smingos@comcast.com.

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Internet speed-freak options for the near future

If you have about your feet when I'm ending every column with the office or considering on the way I spend a lot of time waiting "freaky" up" in my words, in spite of technological advances to expand faster

than the capacity of the transmission media. These new developments promise to alter the old problem. ADSL has been offered about for some months, but should become real early next year. T1/T3 services via cable modems has now launched and will offer 10 Kbps modems are being introduced by all

ways of manufacturers and will ship as early 1997. Let's take a brief look at each of them. ADSL (asymmetric digital subscriber line) is a high-speed technology that operates over existing telephone lines. As its name suggests, it gives you different speeds upstream (from you to the server) and downstream (from the

server to you). Initial releases will offer you 2 Mbps downstream and 1 Mbps upstream while still providing simultaneous upstream voice calls on the same line and second generation ADSL will move this triple the downstream speed.

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the 1990's a CRUISE—AND, IN OTHER WORDS, the future you can trust the telephone company's central office (like switching on the) the slower the connection will be. And the telephone company will have to put additional equipment in their central offices to handle ADSL.

The various flavors of 56 Kbps modems under other brand will operate over installed lines taking in order 56 Kbps equipment in the speed or dropping down to 28 Kbps or 16 Kbps for conventional modem connections. This technology is in sync around with upstream traffic in 28 Kbps and downstream in 16 Kbps.

The main here is the system you're using. Most modems with more than one 56 Kbps "server" modem. It uses this line a pure digital connection to the phone system. (Modems use of the first to receive a 56 Kbps modem, explains the reason why most telephone systems have slowly been upgraded from analog to digital over the years with the only analog component left being the line between your home and the central office. Yet today's modems will take the entire connection as analog, converting your PC's digital signals to analog for transmission and converting the analog signals from the phone system back to digital at the receiving end. The signal conversion from analog to digital for specific technical reason. Unlike transmission speeds to a maximum of 56 Kbps (digital to analog is not a problem).

Modems at 2 technology get around the lack by keeping the downstream data in digital form. Upstream data now will be converted to analog and is sent to the phone system.

Get cable?

The third high-speed medium is cable modem. The cable television companies across Canada have now announced the use the advanced VBI. Rogers Cablevision (the pioneer who pioneered with the other

continued on page 56

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The year Win95 stabilizes?



White's
Bytes

Marcus White

Wouldn't it be great to look forward to the 1995? It begins with you and me and the new 32-bit versions of just about every software application you've ever heard of: the Windows 95 and Windows NT. In fact, some of them may have arrived just before this issue hits its streets, including our brand new versions of Microsoft Office and IBM/Lucas SmartSuite, as well as the CorelDraw 7 suite.

Consequently, with the Internet will be highly featured in all new products. There will be links to updated help files, special Web pages with additional comments and enhancements. Each is a more clip on an

Internet and new Web management interfaces that will make it difficult for a casual observer to determine whether you're connected to the Net or not, but you'll have local data files. Not even as becoming a necessity.

We can look forward to new versions of both Microsoft Internet Explorer (which will also change the Windows NT interface again) and Netscape Navigator—to test the speed with which their companies are trying to catch each other, with a focus on improved if we see more than one version of each before the year or the year-end.

Stabilism on

Microsoft's will be more stable as a group. Most of the products released in early to mid 1995 would be to help—which the developers blamed on the environment in which they were forced to work. Most companies don't have the kind of shipping code for Windows 95 and it's not a new and very working from beta or a 1994 version of the software developer's eye.

It's also clear Microsoft will be working down the water page and the learning curve should be reduced then as well.

One of the many intriguing software questions for 1995 will be what Microsoft will make the latest versions of Windows 95 available to consumers. Since the company was first expected to begin shipping there have been two updates that have only been seen

to manufacturers of new systems. Different, 1995 (1995 Service Release 1) and Gold. These versions not only fixed some only used to be already seen in the commercial release, they've added enhancements as well, including a new file system (NTFS) in 1995 designed to make more efficient use of large hard disks and saving lengthy backups of large files of space on drives, saving 1 GB or so.

Portions of 1995 appear to have Microsoft's beta Service Pack 1 available from both on Web site—help (www.microsoft.com) and free, for downloading—and by disk at a price, but not all of the fixes are there.

As of the date I'm writing this and despite repeated requests for information on my part, the company has not released any plans for public distribution of the 1995 components—although it has indicated that a new commercial release of Windows 95 (1995) may be coming at the end of 1995 or early in 1996.

If I were leading out "95 and beyond" the year Microsoft would definitely be doing the policy and over the line.

Fixing up speed

On the hardware side, we can expect more speed than speed and a very interesting market. In fact, to make the PC's 100 or 200 per the Pentium MMX processor (the work has continued for a year of 16 and

1994, code for 32-bit MMX version of the Pentium will directly support software emulation of audio (speech) rates. 3D acceleration (3D acceleration) and multimedia (multimedia) will also be a price, but should drive the cost of creating Pentium and Pentium Pro processors down as a result.

Later in the year, we'll see the first Pentium Pro (the second Pentium) and the second 32-bit version of Windows 95.

Crucial and AMD are also poised to offer new products. Crucial is demonstrating the "4G" with 64 MB internal cache, some Pentium Pro data handling techniques (MMX) processors and the ability to run on a fast 75 MHz system bus—all ready packaged to fit existing Pentium processor sockets.

AMD's proposed 686 is similar, albeit with 12 MB cache and linked to 36 MHz system bus speeds. Neither is shipping yet.

The PowerPC, currently has something to look forward to as well. Although Motorola has been pushed to 686, processor to 240 MHz (available in its 686, 686/240 with the OS) a California startup company (Exponential Technology, Inc.) (www.exp-tech.com) has shown samples of 400 MHz and 566 MHz versions of a PowerPC chip that will be available in quantity this spring.

And, how about the Pentium Computer/Internet? Not about it. Let's talk again when there are more in the market and someone actually says so. *

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you turn on your computer for analysis is from a floppy, it asks you for a password.

Programs such as Norton's DiskDoctor (approx. \$120) or Scan Master's NigraWatch (approximately \$110) will do a good job in this. Other password-lock programs, however, can be a pretty weak defense since someone looking up with a spreadsheet floppy can circumvent the program.

Glance the keys

Excepting out keystroke-logging software, this is the only real way to safeguard a file in a disoriented state. The concept of encryption involves using a password or algorithm "key" to scramble your plaintext message into a unreadable form called a ciphertext.

Commercial programs such as P54 Secure (from RSA Data

Security in Berkeley, Calif.) do a good job of encryption. P54 Secure is available for both Windows-based computers and Macs for approximately \$150. Other programs in the same category include Norton's FastCrypt (part of Symantec's Norton Utilities) and Scan Master's Hidden Mail File Guard (3200) from MSD software is also an excellent choice.

With your business plan that encrypts your e-mail, doesn't research be able to make any sense of a even if they successfully copied the file.

During the encryption process there are two objects: functions giving us the first decryption is the scrambling of your file. The second decryption is the reverse process—that is, using the password to translate the

unreadable file back into its readable form.

Inconveniences
The first problem you might encounter is forgetting the password to your file. This can be overcome by making a note of the password or place and then modifying it. For example, your dog's name "Spot" may be easy to guess, but if you add a few characters from the top of your keyboard making "spotgtr" your password becomes much safer. By the way, good passwords should be at least eight characters in length.

The second problem is having your intended recipients know the password. If you're really paranoid, you might suspect your mail is being pilfered and your phone tapped. What is not true is that PGP (for acronym for "Pretty Good Privacy") a program written by Philip Zimmermann, and originally described across the Internet from also available commercially, from Phoenix-based NetCrypt. PGP lets you send out an encrypted document plus the decryption key.

The trouble that the key is also enciphered is a seriously complicated way, so that only the recipient can open the document. Zimmermann's actions drew the attention of the US government, which takes cryptography very seriously since the government views programs of this sort as "weapons." It charged Zimmermann with illegally exporting military software without the proper licenses. After years of legal wrangling, the US government finally decided to drop all charges against him.

No, it's not like world space—or is it? ♦

Related encryption newsgroups

Fire up your newsgroup reader and learn all about the wonderful world of encryption. Here are a few places to start.

- **misc legal computing** carries many interesting discussions on the laws surrounding cryptographic export and what people think about those laws.
- **sci.crypt** concerns discussions about the science of encryption.
- **alt.security.pgp** is a newsgroup geared to users of Zimmermann's PGP (Pretty Good Privacy) encryption program.
- **alt.security.rsa** contains information about the encryption program RSA (the most commonly used program made in the United States, but not available for shipment outside the United States).

What is the National Security Agency?

The NSA is the official communications security body of the US government. Within the intelligence community, they're known as the "spooks." The organization was given its character by President Truman in the early 1950s and continues research in cryptology today.

For reasons of national security, almost all information about the NSA is classified or secret. We do know, however, that the NSA is the largest employer of mathematicians and the largest purchaser of computer hardware in the world (what, you thought the government was spending millions of dollars to predict the weather?).

Just about everyone in the industry agrees that the NSA probably possesses cryptographic expertise many years ahead of the public's knowledge. This means that the NSA can likely break most—if not all—of the commercial systems used today. Have a nice day.

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The future of banking

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•• By PAUL EMMA ••

There was a time when banks were open from 9 AM to 5 PM. If you had business to conduct outside "business hours" you were totally out of luck. The times are now changing.

Banks are now keeping branch hours, but you can conduct most banking business from 24 hours a day 7 days a week, without visiting your branch.

Want to deposit checks, pay bills or withdraw funds? Visit an automated banking machine (ABM). Don't want to leave the comfort of your home or office? Pick up the phone or turn on your personal computer and dial into your cyberbranch to do almost anything you'd do in person except withdraw cash.

While most banks and major trust companies have had an Internet presence for a year or so, they still have been mainly places you went for financial information only. Then last year, before you were used to electronic make-up calls.

This company was the first financial institution in Canada to offer actual transaction—personal loans—over the Internet. Customers were able to apply for unsecured personal loans of up to \$15,000 via their home computer and Web connection.

Available

Banking is more than a set of rules on large financial institutions. Almost immediately TO

Bank told it would make across-situations available on the Internet, and Royal Bank told it was giving the money across-situations. Now all of Canada's banks and major trust companies are online interactively.

While David Lord, author of *Money, Fast and Cheap*, claims that business will not get out of the online-banking technology, Canada's financial institutions are ignoring the desegregation's progress. Internet banking is poised for massive growth according to Banking Technology Issues 1996 International Survey from Datapac Information Services Group (2000).

Responding to competitive pressures and customer demand, banks around the world are shifting traditional domains of new technologies and offering Internet-based banking services, says EBC.

While only 7 per cent of bank IT professionals surveyed in last quarter 1996 offered Internet banking services, 34 per cent planned to do so by 1997. By 1997, 59 per cent of respondents plan to implement PC banking services up from 18 per cent in 1996.

Of those surveyed, 54 per cent cited "customer requests" and "cost benefits" as the primary reasons for implementing online bank services.

You want it

Electronic banking offers consumers more convenience, says Chuck Housell, Canada Trust vice president of distribution develop-

ment. "With the Internet and phone growth, improved convenience over branches alone. While the telephone is easy to access and easy to use, the Internet is growing to be the best tool for customers who have standard credit-cards or bank accounts."

Housell has heard from customers as far away as Mexico, Hong Kong and Bangladesh who used Canada Trust's Internet account information service "to get more to provide full banking over the Internet, but convenience will improve."

While all of Canada's banks allow transfer money on the Internet, they offer Canadian proprietary software and direct connections to their computer systems.

"The banks want to encourage customers to bank on the Internet, but they're concerned about security about banking (their) interests to the outside," says a BC university computer science professor who performed one of the earliest studies of bank IT in the industry.

Banks' traditional computer and computer companies have been used to profit from electronic commerce, but are now seeing a new wave of e-commerce. "I think Canada's banks are financial institutions to properly build and execute solutions that meet customer needs and use only as we," says Housell.

Even as more consumers use technology to bank and access more information, as their computers they will have to adapt both hardware and access, says Housell.

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Alliance for Encouraging Technology
<http://www.alliance.com/>

Bigger picture

Security almost alone the more is electronic banking is part of a much larger trend. Also Philip Lightstone, director of network security for Netscape Technologies Inc.

"Everything is wrapped up with the notion of the perimeter, either real and virtual. Low security levels at security's changing policies. We're seeing a move from charge cards to debit cards, but ten years ago the debit card would not have worked. People wouldn't carry money around on a chip."

We're not moving to electronic commerce simply because we can, says Lightstone. "The cost of supporting electronic money or e-commerce." Ironically, Lightstone says the main challenge is not a technology challenge but one of "changing consumer perceptions of the use of the technology."


Bank of Montreal's first position is in the...
ILLUSTRATED BY JAMES S. PAGE 56

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If you work or live with teenagers, you know they can be the most irritating and frustrating people in the world. When interested or motivated, however, they can also be very focused on intelligence.



♦ ♦ By PETER G. WALPOLE ♦ ♦

I was thrilled to read that Tandem Computers, a major technology corporation, is supporting a UNESCO

Antarctic expedition this summer (January to February). About 35 young people (ages 16 to 24) will explore the polar continent. I had planned to follow the trip and report back to our readers.

There's no need, however Tandem has created a wonderful Web page we can all visit daily. Here you'll find updates, photos, progress reports, and news releases.

The page looks great. Give it a visit. Teachers and parents might want to involve their youngsters in this new medium with e-mail and research. Surf over to <http://www.santap.tandem.com/> and see for yourself. ♦

Young explorers heading south



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Computer security book is scary, but useful

• By ALAN THIRIAUX •

In the words of an old saying, "You don't know your own mind until you die." Barry Lewis, coauthor of *Computer Security for Dummies*,

puts it this way: "No computer person felt alone in the Internet risk area and most people are at risk of virus attack, loss or misuse of personal and most importantly data files."

Computer Security for

Dummies is written for everyone from the casual home user to the networked office worker. Both authors are computer security consultants who have experience answering the needs of IT firms. What they've done is (1) to make

hard-to-expertise into information that is practical and memorable and (2) show in standard "Dummies" style plain English a light touch of humor and some cartoons. The content, however, is solid and very helpful.

The book begins by identifying and explaining basic security issues and offers a quick look at key principles such as "accountability," "authentication" and "auditing" and a discussion of "why mass e-mailing" leads to a detailed outline of the threats that computer users face.

See how

The title is enough to make a grown man weep: it includes attacks, password problems, Trojan horses, random eggs and some books as well as the more standard viruses, worms and malware, and the ever present "social human factor."

Knowing what the threats are tells what risks they pose (think Internet) to a highly diversified set of methods that can be used to ensure computer security. These range all the way from keeping one's computer physically secure (no-down key-holds and items) to connecting access with system and file passwords (the book looks at more common workgrouping, spreadsheet, and database apps for Windows 3.11, 95 and Mac, unfortunately) to the critical importance of backing up in ways of dealing with viruses and other malicious programs.

Of particular interest to users of the Internet will be a section of using e-mail securely. The elements for keeping one's e-mail safe from prying eyes involve encoding, encryption, digital signatures, and anonymous remailers.

The book includes a handy list of resources from easily accessible DOG Windows and Mac security utilities to a description of various virus types and what they do. Also included are references of mailing lists, newsgroups and organizations that deal with computer security issues.

How helpful is the book? Well, after reading it, the reviewer now uses systems and file passwords on both desktop and portapop machines backs up data files on a daily basis and is exploring the use of a PCF (Privacy Good Privacy) address to illustrate (the Internet, hard e-mail) it is also looking a lot more secure about not letting the aforementioned e-mail run dry! ♦

info
box

Computer Security for Dummies, by
Barry T. Lewis and Barry D. Lewis,
from McGraw-Hill, ISBN 0-

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Videoconferencing book means business

•• By LINDA GRUENER ••

While novel expenses skyrocket, many companies are seeking less expensive means of conducting such e-business. One space-saving technology is the videoconference in which participants gather in several locations and "meet" over a video link.

But virtual meetings by electronic means entail new sets of skills and new organizational challenges we probably haven't considered. *Effective Videoconferencing: Techniques for Better Business Meetings* by Lynn Diamond, PhD, and Terphane Petersen teaches those skills and addresses many of the challenges in a clear, concise and readable format.

agends items where graphics should be displayed (for example, or who is presenting a segment) and so should be on camera).

Ready with the details

This is a useful book reference for both the

facilitator, moderator or participant and the resource. It lays out the elements of a successful videoconference (even those whose title describe the book) up and do so in a very readable format. It can be a reference guide, a workshop tool, or simply that well-thumbed

reference book you grab whenever a question arises.

Whether you're using the technology or just thinking about it, it is a worthy addition to your corporate library. ■

info box

Effective Videoconferencing: Techniques for Better Business Meetings by Lynn Diamond, PhD, and Terphane Petersen. Sage Group Publications Inc. 2003.


In about 100 pages, the book takes you through the process of organizing and participating in an effective videoconferencing using checklists and charts to present the most information in the least space. It starts by examining what videoconferencing is, and where it's appropriate; a handy chart lists various scenarios and notes how indicators when electronic mail or other simpler low-expense communications would do the trick and when a videoconference is the preferred medium. There are also answers of its strengths, advantages to videoconferencing in well-judged when you need to help justify it to the boss.

Just enough jargon

There is a chapter explaining the technical information you need. Do not too much detail just enough to help you make intelligent decisions and another on planning the meeting. Much of it is useful for the top old meeting not just virtual ones like the suggestion that the meeting have a clearly defined purpose and agenda.

Other, shiny pointers include: "visualize before you talk" (before that, match the words first, then, while talking, you really want to take into the words) and more setup so all participants can see each other with diagrams showing how various layouts will look on screen, too. There is even a section for the moderator that talks about how to effectively manage the discussion.

Appendices include a glossary and a series of checklists and forms you may want to implement. It's helpful to see a checklist that shows you can use and to prove that the videoconference is indeed the most cost-effective solution, a planning checklist and a wrap-around layout you can use to decide how the electronic media should interact with the




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